

=> d his

(FILE 'HOME' ENTERED AT 08:49:58 ON 14 DEC 2005)

FILE 'REGISTRY' ENTERED AT 08:50:05 ON 14 DEC 2005

L1 STRUCTURE UPLOADED  
L2 STRUCTURE UPLOADED  
L3 1 S L1  
L4 61 S L1 FUL  
L5 220 S L2 FUL

FILE 'CAPLUS' ENTERED AT 08:51:20 ON 14 DEC 2005

L6 24 S L4  
L7 90 S L5  
L8 13 S L7 AND L6  
L9 19 S L4/P  
L10 10 S L9 AND L7

=> s l5/ract

90 L5  
2803031 RACT/RL  
L11 15 L5/RACT  
(L5 (L) RACT/RL)

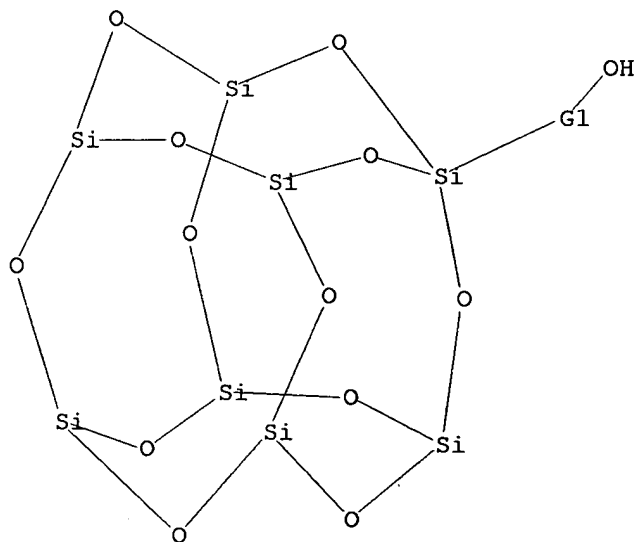
=> s l11 and l9

L12 6 L11 AND L9

=> d l1

L1 HAS NO ANSWERS

L1 STR



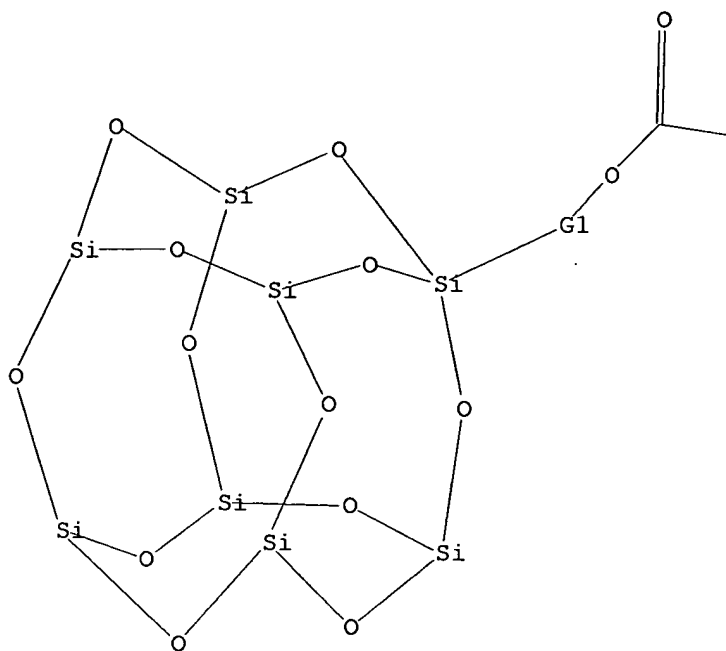
G1 Cy,Ak

Structure attributes must be viewed using STN Express query preparation.

=> d l2

L2 HAS NO ANSWERS

L2 STR



G1 Cy,Ak

Structure attributes must be viewed using STN Express query preparation.

=&gt; d bib abs hitstr 1-6 112

L12 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:960092 CAPLUS

DN 143:249399

TI Diamines bearing silsesquioxanes, and their polymers showing low dielectric constant and optical transmission loss, and their applications

IN Kato, Takashi; Okuma, Yasuyuki

PA Chisso Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005232024	A2	20050902	JP 2004-39577	20040217
PRAI	JP 2004-39577		20040217		
GI					

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The diamines have 1 or 2 silsesquioxane groups I [X = C1-20 (halo)alkyl, C2-20 (halo)alkenyl, C6-20 (halo)aryl; CH2 of X may be replaced with O]. Polyamic acids, polyimides, polyamides, and polyamide-polyimides are manufactured from the diamines. The above polymers are useful for insulating, protective, liquid crystal alignment films for optical waveguides,

semiconductor integrated circuits, and liquid crystal displays. Thus, silsesquioxane Na salt II was treated with  $\text{MeCO}_2\text{CH}_2\text{SiCl}_3$ , hydrolyzed, treated with 3,5-dinitrobenzoyl chloride, and hydrogenated to give III. 4,4'-(Hexafluoroisopropylidene)diphthalic dianhydride was polymerized with III, diluted with cyclohexane, and cast give a polyimide film showing thermal decomposition temperature  $359.9^\circ$  and dielec. constant 2.59.

IT **863323-79-9P**

RL: DEV (Device component use); IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); **RACT (Reactant or reagent)**; USES (Uses)

(diamines bearing silsesquioxanes for polyimides, polyamides, and polyamide-polyimides showing low dielec. constant and optical transmission loss)

RN 863323-79-9 CAPLUS

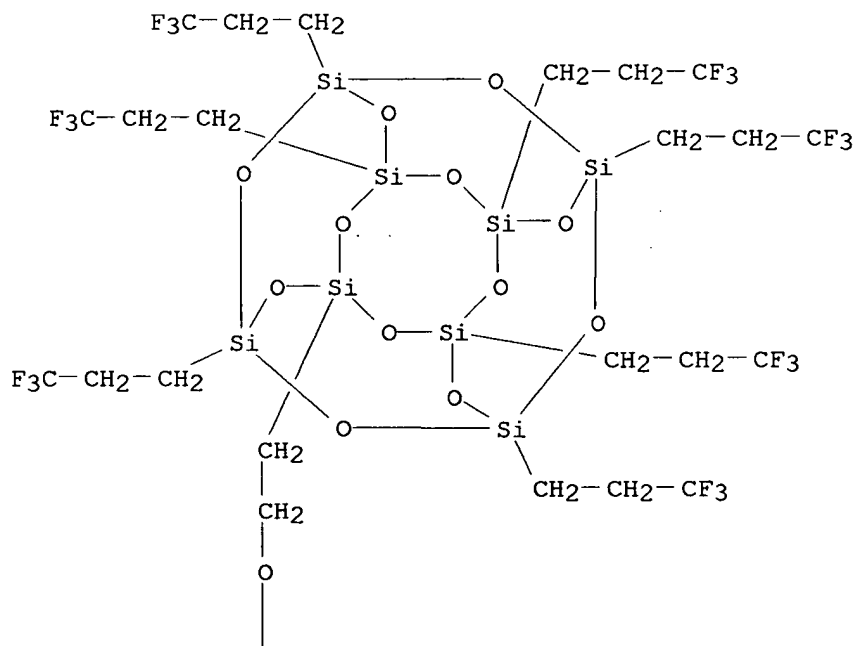
CN Benzoic acid, 2,5-diamino-, 2-[heptakis(3,3,3-trifluoropropyl)pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanyl]ethyl ester, polymer with 5,5'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[1,3-isobenzofurandione] (9CI) (CA INDEX NAME)

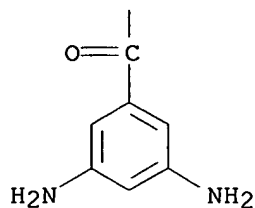
CM 1

CRN 863323-78-8

CMF C30 H39 F21 N2 O14 Si8

PAGE 1-A

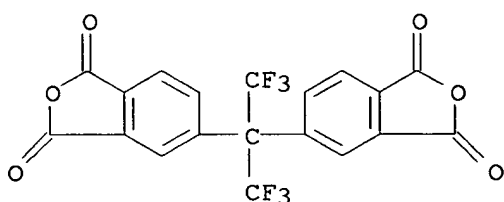




CM 2

CRN 1107-00-2

CMF C19 H6 F6 O6



IT 757199-00-1P 757199-24-9P 863323-77-7P

863323-78-8P

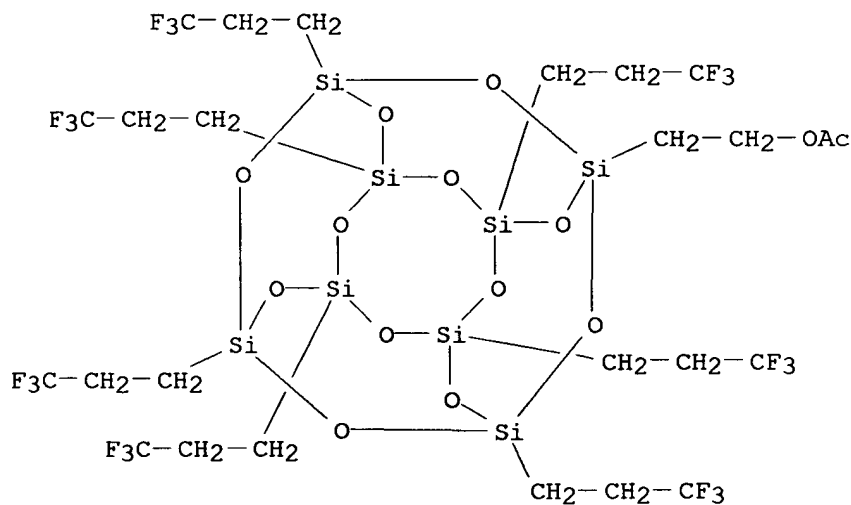
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation);

**RACT (Reactant or reagent)**

(diamines bearing silsesquioxanes for polyimides, polyamides, and polyamide-polyimides showing low dielec. constant and optical transmission loss)

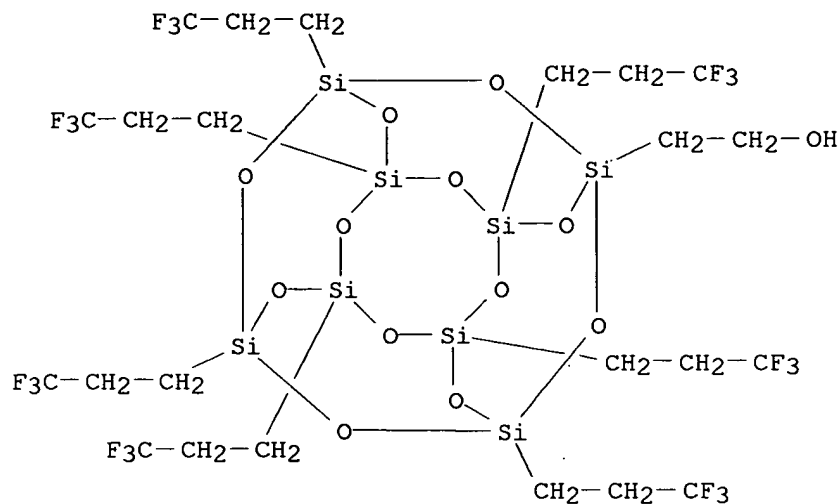
RN 757199-00-1 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol, 3,5,7,9,11,13,15-heptakis(3,3,3-trifluoropropyl)-, acetate (9CI) (CA INDEX NAME)



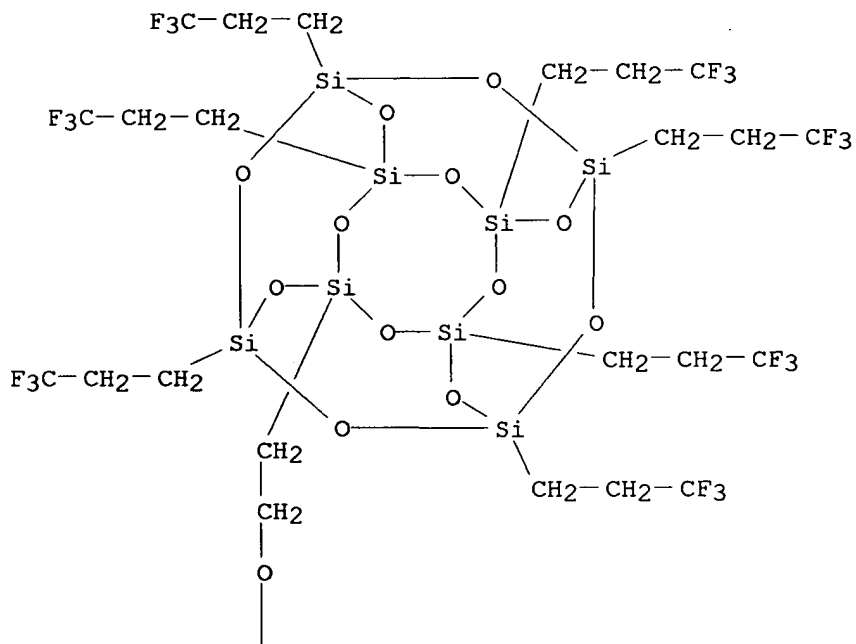
RN 757199-24-9 CAPLUS

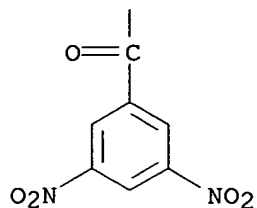
CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
3,5,7,9,11,13,15-heptakis(3,3,3-trifluoropropyl)- (9CI) (CA INDEX NAME)



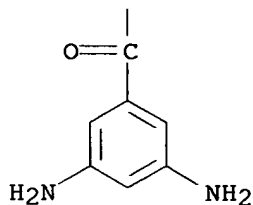
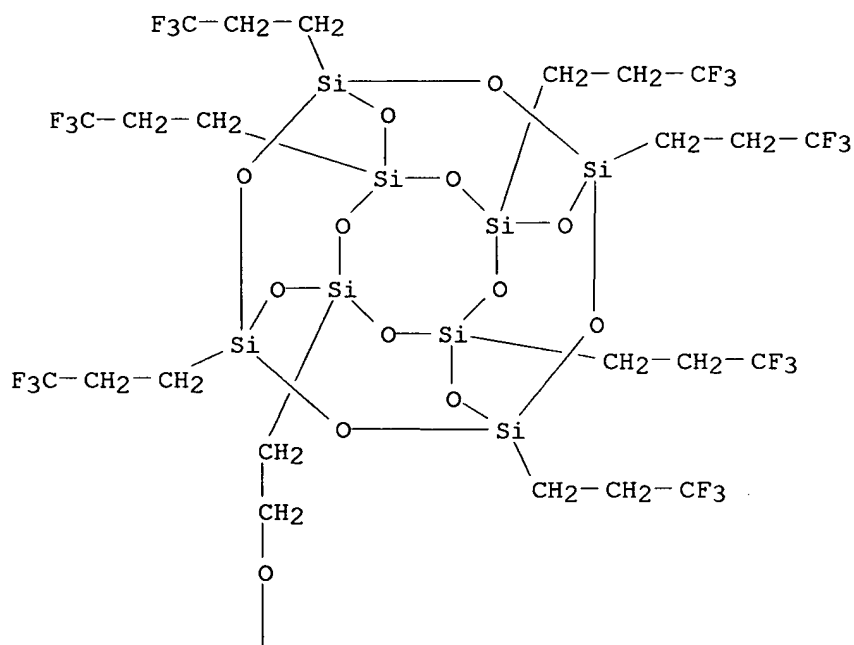
RN 863323-77-7 CAPLUS  
CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
3,5,7,9,11,13,15-heptakis(3,3,3-trifluoropropyl)-, 3,5-dinitrobenzoate  
(9CI) (CA INDEX NAME)

PAGE 1-A





RN 863323-78-8 CAPLUS  
 CN Benzoic acid, 3,5-diamino-, 2-[heptakis(3,3,3-trifluoropropyl)pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanyl]ethyl ester (9CI) (CA INDEX NAME)



L12 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2005:71629 CAPLUS  
 DN 142:336699  
 TI Precision Synthesis of a Fluorinated Polyhedral Oligomeric

Silsesquioxane-Terminated Polymer and Surface Characterization of Its Blend Film with Poly(methyl methacrylate)

AU Koh, Kyoungmoo; Sugiyama, Satoshi; Morinaga, Takashi; Ohno, Kohji; Tsujii, Yoshinobu; Fukuda, Takeshi; Yamahiro, Mikio; Iijima, Takashi; Oikawa, Hisao; Watanabe, Kenichi; Miyashita, Tokuji

CS Institute for Chemical Research, Kyoto University, Uji, Kyoto, 611-0011, Japan

SO Macromolecules (2005), 38(4), 1264-1270

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

AB Incompletely condensed, fluorinated polyhedral oligomeric silsesquioxane with the highly reactive group of trisodium silanolate was used for the synthesis of an initiator for atom transfer radical polymerization The initiator

was applied to solution polymerization of Me methacrylate (MMA) in the presence of a

copper complex. The polymerization proceeded in a living fashion, providing tadpole-shaped polymers with an "inorg. head" of polyhedral oligomeric silsesquioxane (POSS) and an "organic tail" of well-defined PMMA. A blend film composed of the tadpole-shaped polymer and a matrix PMMA was annealed at 180 °C for 5 days and then analyzed by neutron reflectometry, XPS, and contact angle measurement. These analyses revealed that the tadpole-shaped polymer was preferentially populated at the air/polymer interface, and the outermost layer of the film was almost completely covered by the POSS heads. This was mainly due to the low surface free energy of the fluorinated POSS moiety. Owing to this unique structure, the blend film showed strong resistance against Ar<sup>+</sup> ion etching, despite the overall POSS content was only 2 wt %.

IT 757199-58-9P

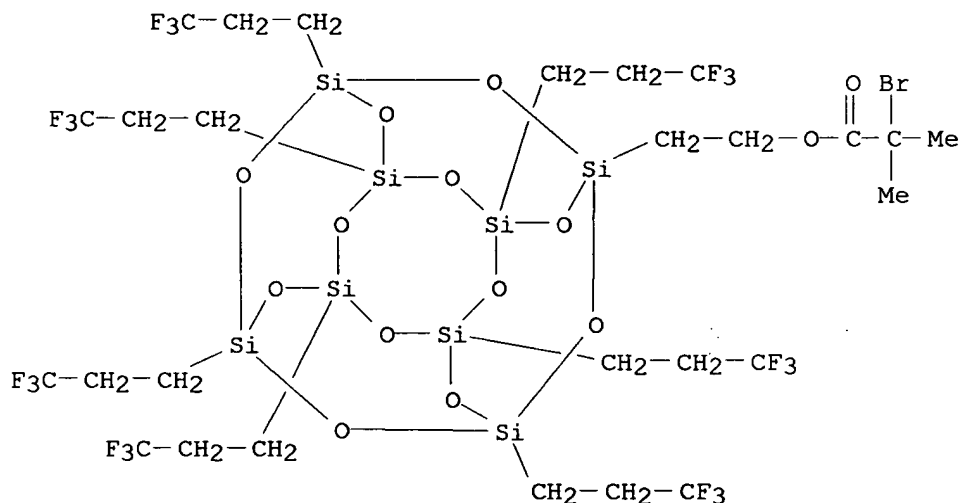
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);

**RACT (Reactant or reagent)**

(initiator for ATRP; precision synthesis of fluorinated polyhedral oligomeric silsesquioxane-terminated polymer and surface characterization of its blend film with poly(Me methacrylate))

RN 757199-58-9 CAPLUS

CN Propanoic acid, 2-bromo-2-methyl-, 2-[3,5,7,9,11,13,15-heptakis(3,3,3-trifluoropropyl)pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanyl]ethyl ester (9CI) (CA INDEX NAME)



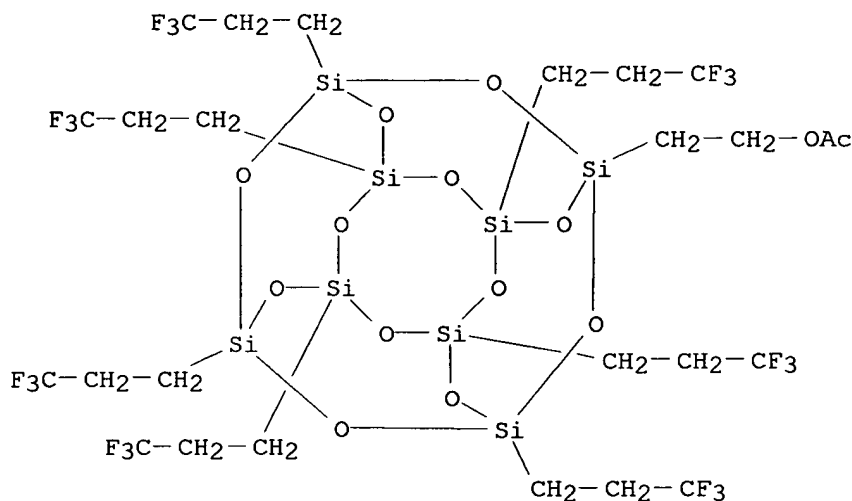
IT 757199-00-1P 757199-24-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);

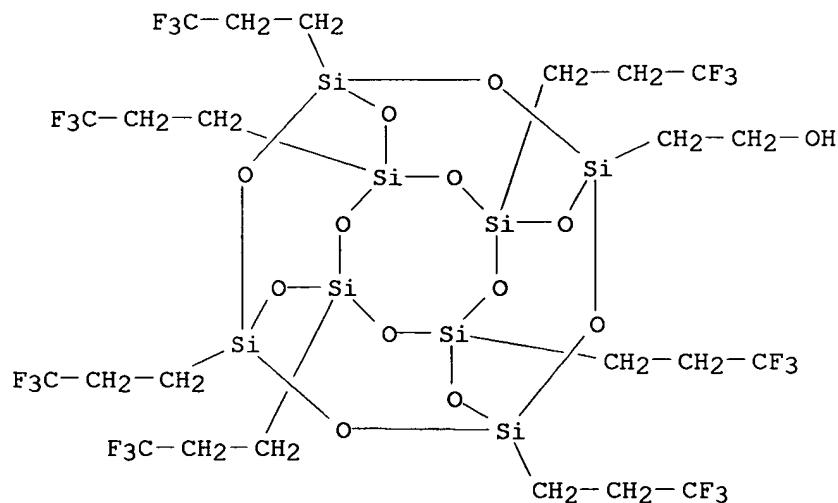
**RACT (Reactant or reagent)**

(intermediate in preparation of initiator; precision synthesis of fluorinated polyhedral oligomeric silsesquioxane-terminated polymer and surface characterization of its blend film with poly(Me methacrylate))

RN 757199-00-1 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
3,5,7,9,11,13,15-heptakis(3,3,3-trifluoropropyl)-, acetate (9CI) (CA  
INDEX NAME)

RN 757199-24-9 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
3,5,7,9,11,13,15-heptakis(3,3,3-trifluoropropyl)- (9CI) (CA INDEX NAME)

RE.CNT 65

THERE ARE 65 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT



L12 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:874865 CAPLUS

DN 142:56733

TI Living Radical Polymerization by Polyhedral Oligomeric  
Silsesquioxane-Holding Initiators: Precision Synthesis of Tadpole-Shaped  
Organic/Inorganic Hybrid PolymersAU Ohno, Kohji; Sugiyama, Satoshi; Koh, Kyoungmoo; Tsujii, Yoshinobu; Fukuda,  
Takeshi; Yamahiro, Mikio; Oikawa, Hisao; Yamamoto, Yasuhiro; Ootake,  
Nobumasa; Watanabe, KenichiCS Institute for Chemical Research, Kyoto University, Uji, Kyoto, 611-0011,  
Japan

SO Macromolecules (2004), 37(23), 8517-8522

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

AB Incompletely condensed polyhedral oligomeric silsesquioxane (POSS) with  
the highly reactive group of trisodium silanolate was used for the  
synthesis of two initiators for atom transfer radical polymerization, one with

a

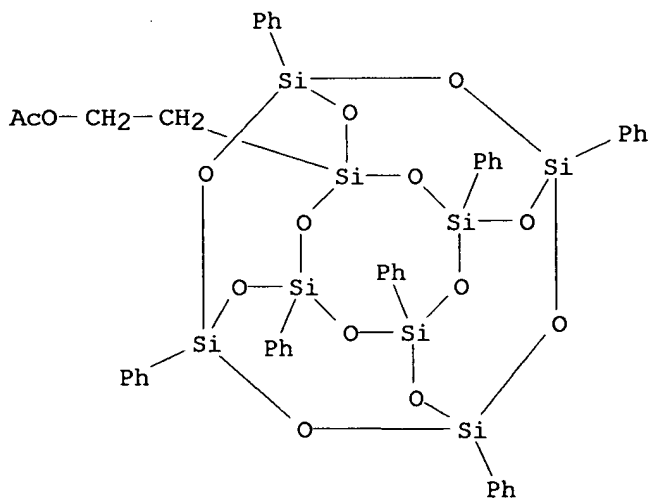
2-bromoisobutyl group and the other with a chlorosulfonyl group. These  
initiators were applied to solution polymns. of styrene and Me methacrylate  
in the presence of a copper complex. In both systems, polymerization proceeded  
in a living fashion, as indicated by the first-order kinetics of monomer  
consumption, the evolution of mol. weight in direct proportion to monomer  
conversion, the good agreement of mol. weight with the theor. one, and the  
low polydispersity, thus providing tadpole-shaped polymers with an "inorg.  
head" of POSS and an "organic tail" of well-defined polymer.  
Thermogravimetric and differential scanning calorimetric studies showed  
that both thermal degradation and glass transition temps. of the organic/inorg.  
hybrid polymers with mol. wts. up to about 20 000 were enhanced as  
compared to those of model polymers without the POSS moiety.

IT 757198-90-6P 757199-15-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);

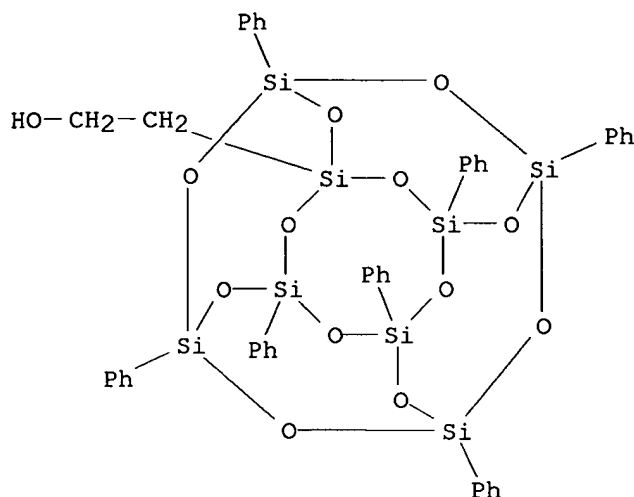
**RACT (Reactant or reagent)**(in preparation of living radical polymerization polyhedral oligomeric  
silsesquioxane-holding initiators)

RN 757198-90-6 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
3,5,7,9,11,13,15-heptaphenyl-, acetate (9CI) (CA INDEX NAME)

## CAS ONLINE PRINTOUT

RN 757199-15-8 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
 3,5,7,9,11,13,15-heptaphenyl- (9CI) (CA INDEX NAME)



RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN *Applicant's work*  
 AN 2004:816588 CAPLUS  
 DN 141:315093  
 TI Hydroxy-containing T8-silsesquioxane cage compounds and their manufacture  
 IN Yamahiro, Mikio; Oikawa, Hisao; Ito, Masaya; Tanaka, Masami; Otake,  
 Nobumasa; Watanabe, Kenichi  
 PA Chisso Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 90 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

*Instant Application*

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP <del>2004277401</del>	A2	20041007	JP 2003-325176	20030917
	US <u>2005033077</u>	A1	20050210	US 2003-664151	20030917
PRAI	JP 2002-270430	A	20020917		
	JP 2003-53144	A	20030228		
OS	MARPAT 141:315093				
GI					

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Title compds. I [R1 = H, (ether-containing) (fluoro)alkyl, (fluoro)alkenyl, (un)substituted aryl, (un)substituted aralkyl; A1 = OH-terminated organic group], useful as thermoplastic modifiers, interlayer insulation films, sealants, coatings, fireproofing agents, etc. (no data), are manufactured from I (A1 = acyloxy-containing organic group). Thus, Ph silsesquioxane Na salt II was treated with Cl3SiC2H4OAc in THF at room temperature for 2 h to give 65.9%

I

## CAS ONLINE PRINTOUT

(R1 = Ph, A1 = C2H4OAc), which was transesterified with MeOH in CHCl<sub>3</sub> in the presence of H<sub>2</sub>SO<sub>4</sub> at room temperature for 72 h to give 91.7% I (R1 = Ph, A1 = C2H4OH).

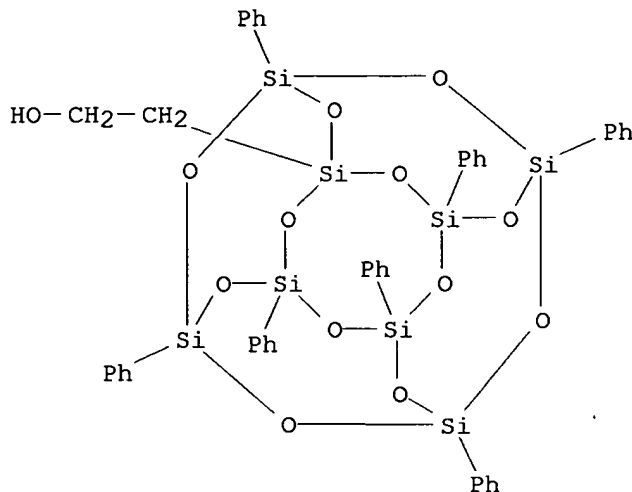
IT 757199-15-8P 757199-24-9P 757199-26-1P

RL: IMF (Industrial manufacture); PREP (Preparation)

(manufacture of hydroxy-containing T8-silsesquioxane cage compds. via acyloxy-containing silsesquioxanes)

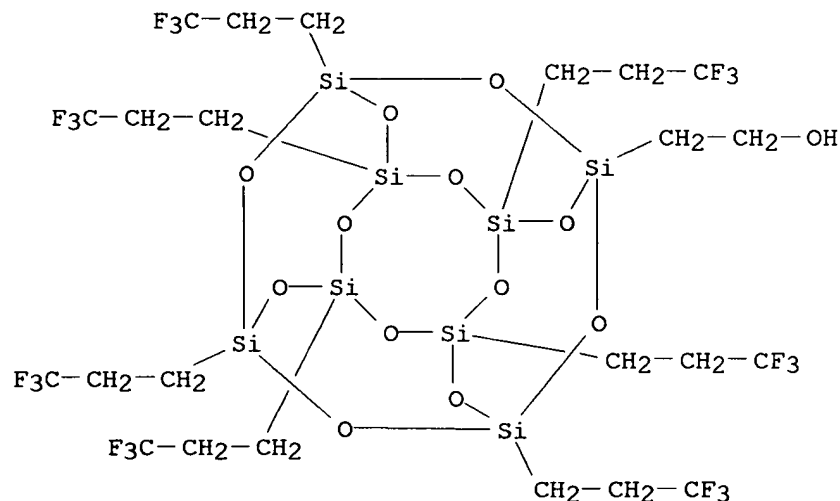
RN 757199-15-8 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol, 3,5,7,9,11,13,15-heptaphenyl- (9CI) (CA INDEX NAME)



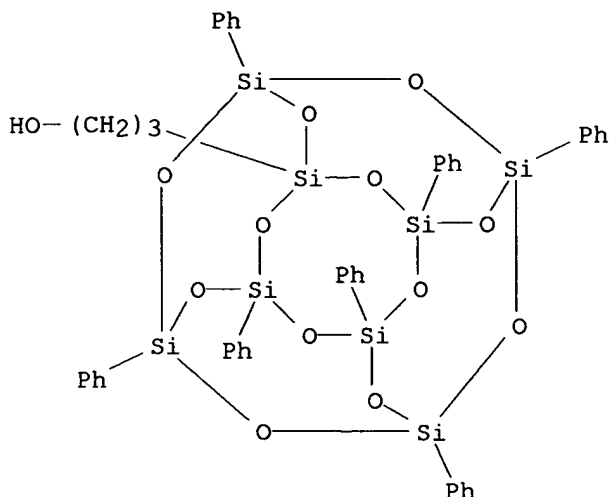
RN 757199-24-9 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol, 3,5,7,9,11,13,15-heptakis(3,3,3-trifluoropropyl)- (9CI) (CA INDEX NAME)



RN 757199-26-1 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol, 3,5,7,9,11,13,15-heptaphenyl- (9CI) (CA INDEX NAME)



IT 757198-90-6P 757199-00-1P 757199-03-4P

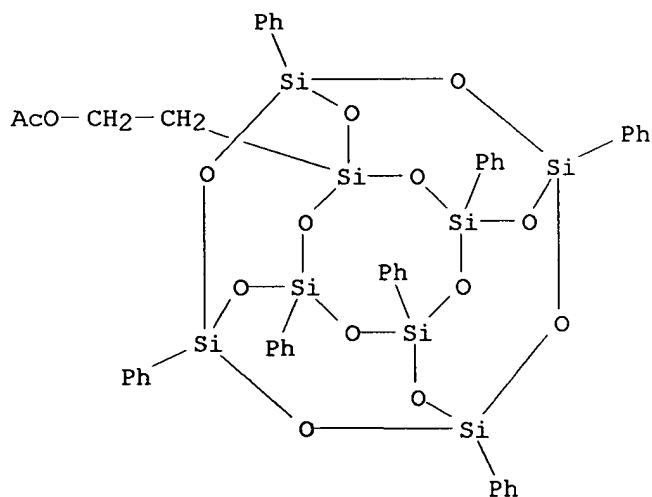
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation);

**RACT (Reactant or reagent)**

(manufacture of hydroxy-containing T8-silsesquioxane cage compds. via acyloxy-containing silsesquioxanes)

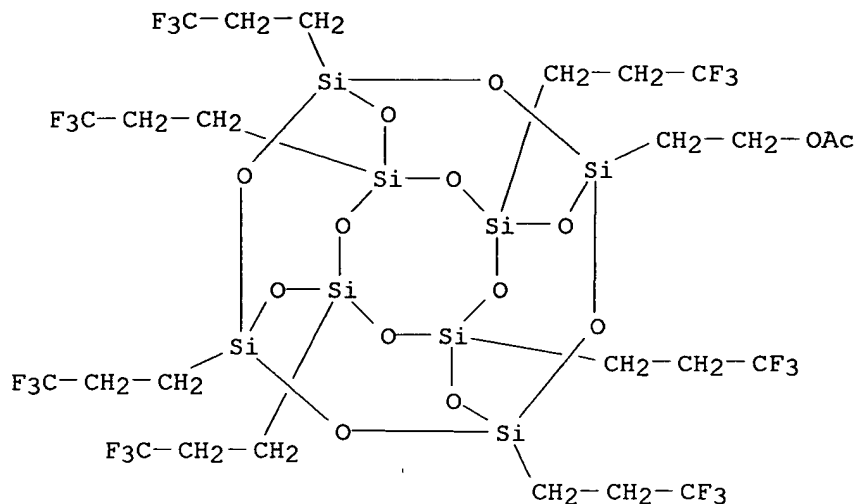
RN 757198-90-6 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
3,5,7,9,11,13,15-heptaphenyl-, acetate (9CI) (CA INDEX NAME)

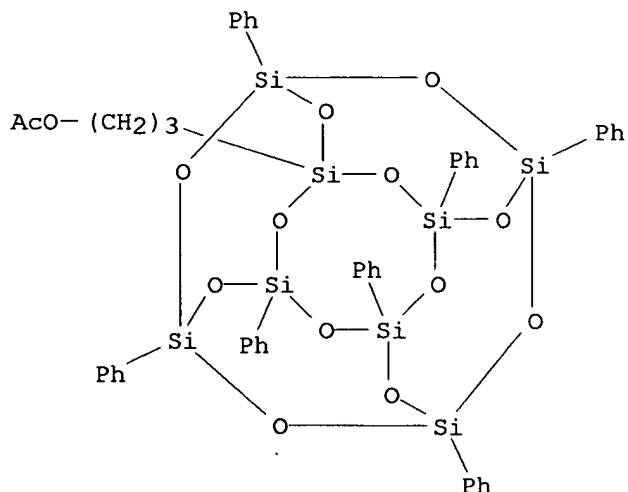


RN 757199-00-1 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
3,5,7,9,11,13,15-heptakis(3,3,3-trifluoropropyl)-, acetate (9CI) (CA  
INDEX NAME)



RN 757199-03-4 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
3,5,7,9,11,13,15-heptaphenyl-, acetate (9CI) (CA INDEX NAME)

L12 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:756725 CAPLUS

DN 141:278049

TI Silicone compds. having polymerization initiator capability to additional  
polymerizable monomersIN Yamahiro, Mikio; Oikawa, Hisao; Ito, Kenya; Yamamoto, Yasuhiro; Tanaka,  
Masami; Ootake, Nobumasa; Watanabe, Kenichi; Ohno, Kohji; Tsujii,  
Yoshinobu; Fukuda, Takeshi

PA Chisso Corporation, Japan

SO PCT Int. Appl., 142 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.

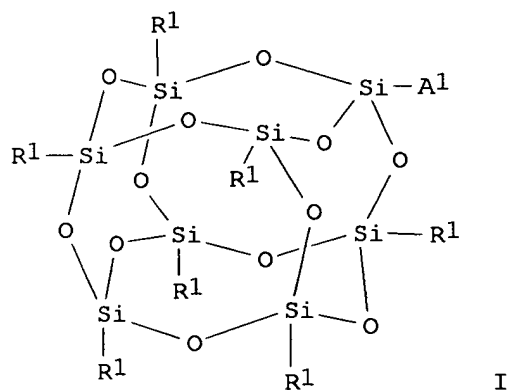
KIND

DATE

APPLICATION NO.

DATE

PI	WO 2004078767	A1	20040916	WO 2004-JP2809	20040305
	W:	AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA, NI			
	RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
PRAI	JP 2003-62135	A	20030307		
OS	MARPAT 141:278049				
GI					



AB The invention provides silicone compds. I and polymers made by using the same, which brings about organic-inorg. composite materials having definite structures and makes it possible to control the structure of the polymers as mol. aggregate, wherein R1 = independently H, C1-40 alkyl, (un)substituted aryl, and (un)substituted arylalkyl (any hydrogen may be replaced by fluorine in C1-40 alkyl and CH2 group may be replaced by O, CH:CH, cycloalkylene, or cycloalkenylene and any hydrogen may be replaced by fluorine in alkylene of arylalkyl and any CH2 group may be replaced by O or CH:CH in arylalkylene) and Al = an  $\alpha$ -halo ester linkage-containing group. Thus, 211.5 g trichlorosilane was reacted, sodium hydroxide was added therein and reacted, 2-acetoxyethyltrichlorosilane was added therein and reacted, methanolized, and reacted with 2-bromo-2-methylpropionyl bromide to give 2-bromo-2-methylpropionyloxyethyl-heptaphenyloctasilsesquioxane, 1 mol of which was mixed with styrene 500, L-(-)sparteine 1, and copper(I) bromide 1 mol in di-Ph ether and polymerized at 110° for 1 h to give a polymer with Mn 3700 and polydispersity 1.14.

IT 244096-50-2P 352538-66-0P 681235-70-1P  
 757198-90-6P 757198-92-8P 757198-94-0P  
 757198-96-2P 757198-98-4P 757199-00-1P  
 757199-03-4P 757199-05-6P 757199-07-8P  
 757199-09-0P 757199-11-4P 757199-13-6P

CAS ONLINE PRINTOUT

757199-15-8P 757199-17-0P 757199-19-2P  
 757199-22-7P 757199-24-9P 757199-26-1P  
 757199-28-3P 757199-31-8P 757199-34-1P  
 757199-40-9P 757199-42-1P 757199-44-3P  
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 757212-08-1P 757212-09-2P

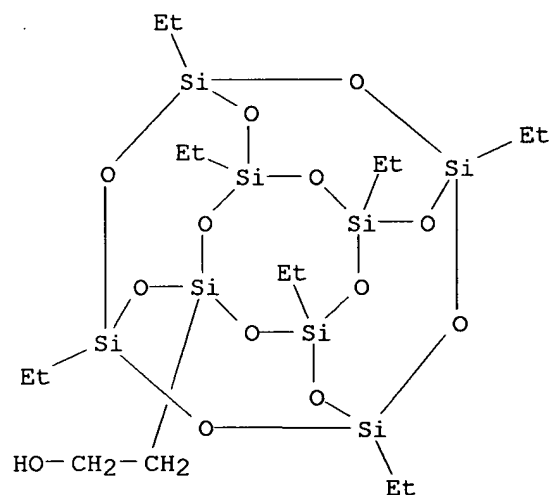
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation);

**RACT (Reactant or reagent)**

(intermediate; preparation of silicone compds. having polymerization  
 initiator  
 capability to addnl. polymerizable monomers)

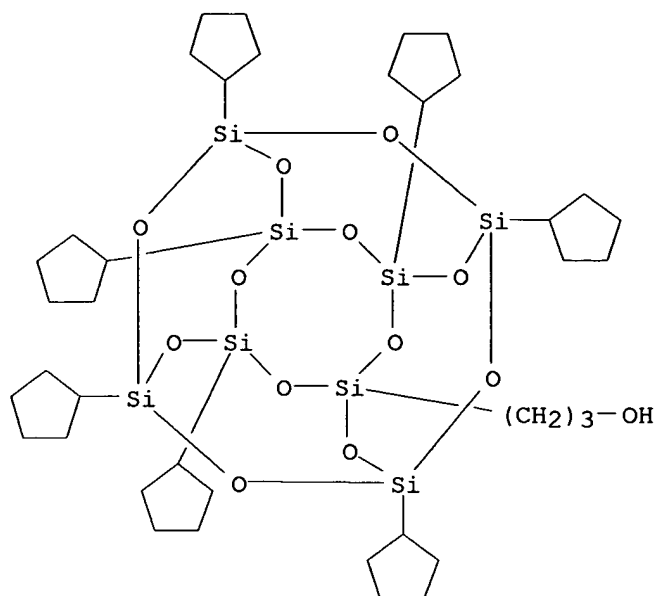
RN 244096-50-2 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
 3,5,7,9,11,13,15-heptaethyl- (9CI) (CA INDEX NAME)

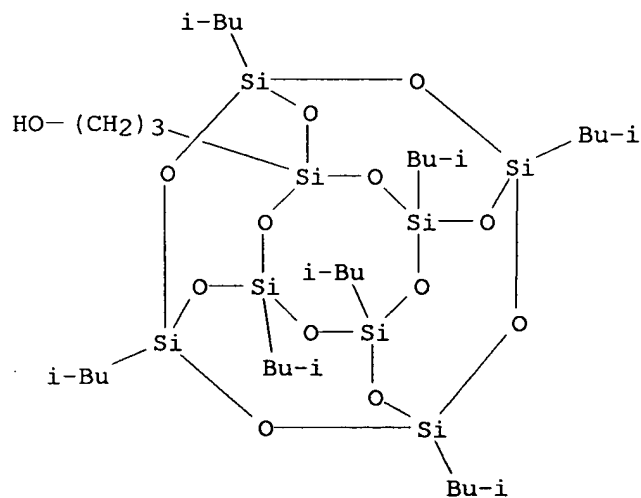


RN 352538-66-0 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
 3,5,7,9,11,13,15-heptacyclopentyl- (9CI) (CA INDEX NAME)



RN 681235-70-1 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxane-1-propanol,  
 3,5,7,9,11,13,15-heptakis(2-methylpropyl)- (9CI) (CA INDEX NAME)

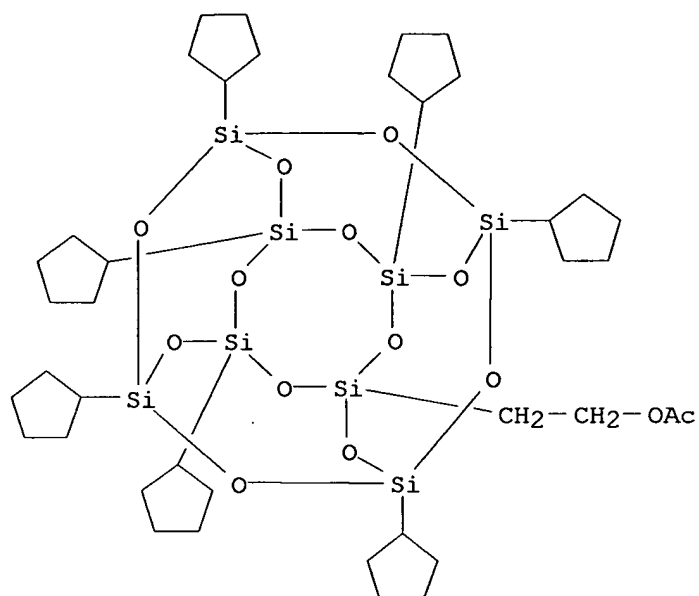


RN 757198-90-6 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxane-1-ethanol,  
 3,5,7,9,11,13,15-heptaphenyl-, acetate (9CI) (CA INDEX NAME)

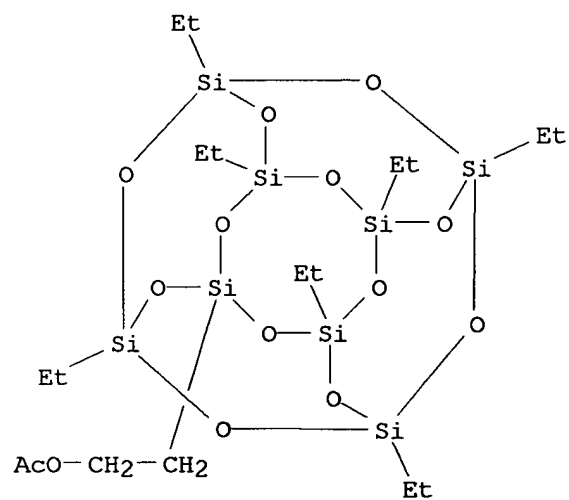


The diagram shows a cyclic siloxane polymer structure. It consists of a ring of eight silicon (Si) atoms connected by oxygen (O) atoms. Each silicon atom is also bonded to a phenyl group (represented by a hexagon). One of the silicon atoms in the ring is also bonded to a pendant group,  $\text{CH}_2\text{CH}_2\text{OAc}$ .

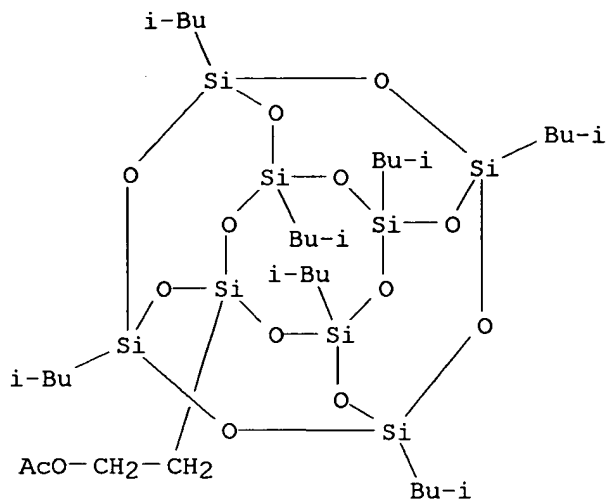
RN	757198-94-0	CAPLUS
CN	Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol, 3,5,7,9,11,13,15-heptacyclopentyl-, acetate (9CI) (CA INDEX NAME)	



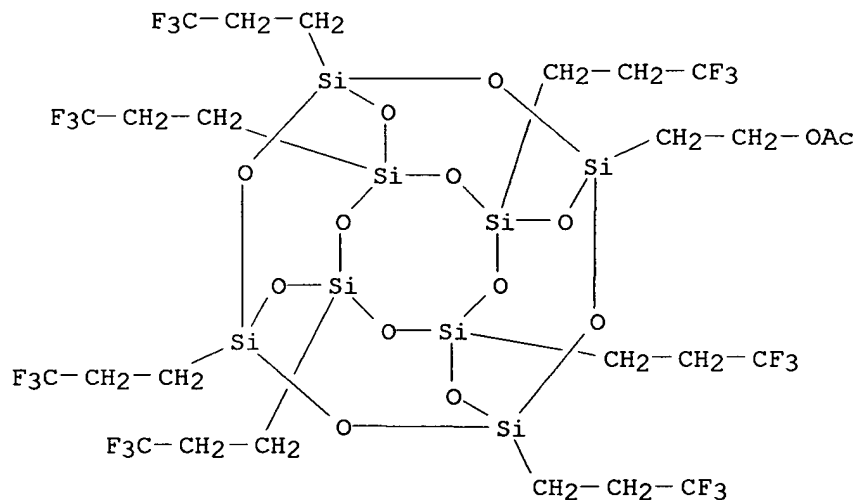
RN 757198-96-2 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
 3,5,7,9,11,13,15-heptaethyl-, acetate (9CI) (CA INDEX NAME)



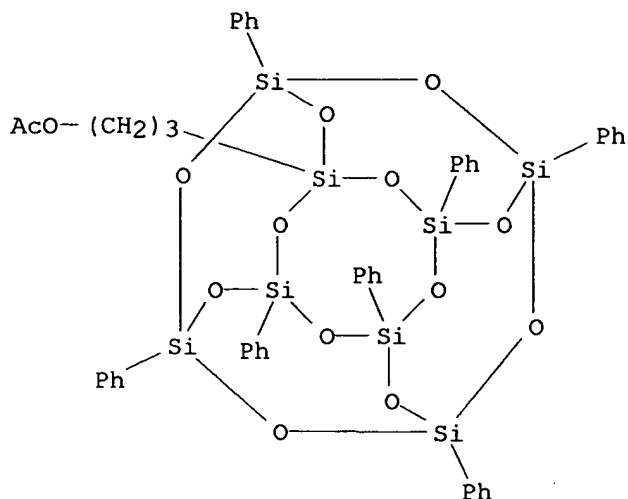
RN 757198-98-4 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
 3,5,7,9,11,13,15-heptakis(2-methylpropyl)-, acetate (9CI) (CA INDEX NAME)



RN 757199-00-1 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
 3,5,7,9,11,13,15-heptakis(3,3,3-trifluoropropyl)-, acetate (9CI) (CA  
 INDEX NAME)

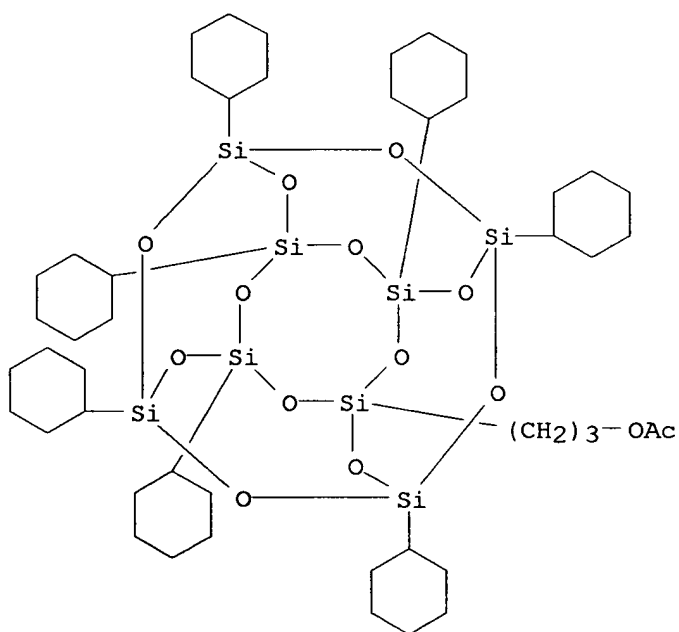


RN 757199-03-4 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
 3,5,7,9,11,13,15-heptaphenyl-, acetate (9CI) (CA INDEX NAME)



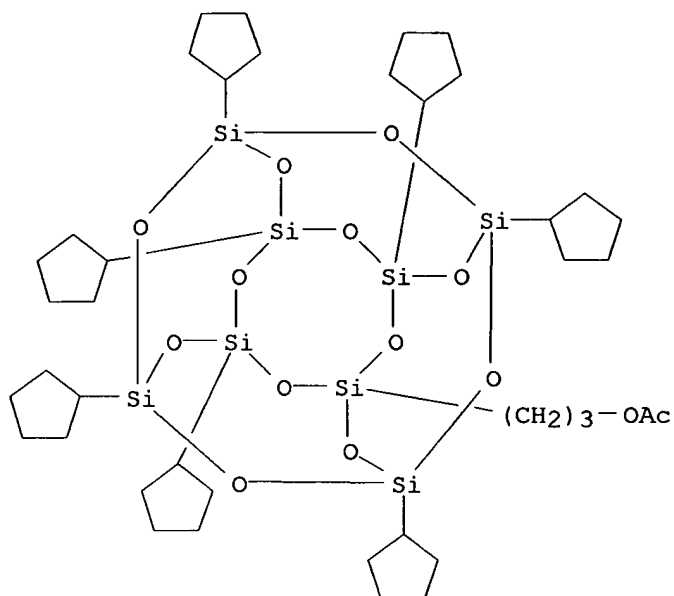
RN 757199-05-6 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
 3,5,7,9,11,13,15-heptacyclohexyl-, acetate (9CI) (CA INDEX NAME)

PAGE 1-A

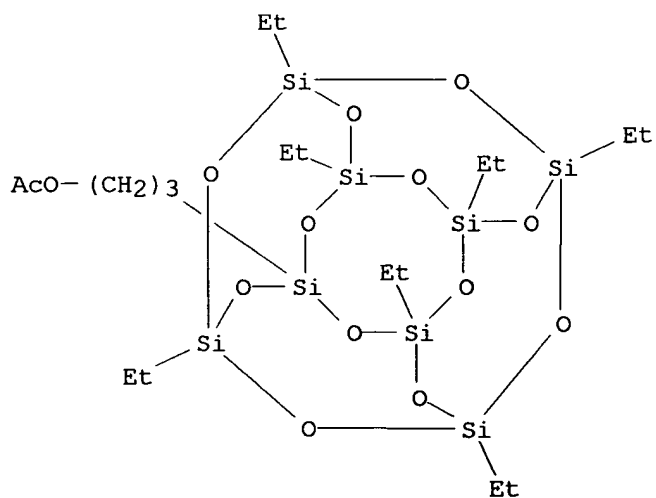


PAGE 2-A

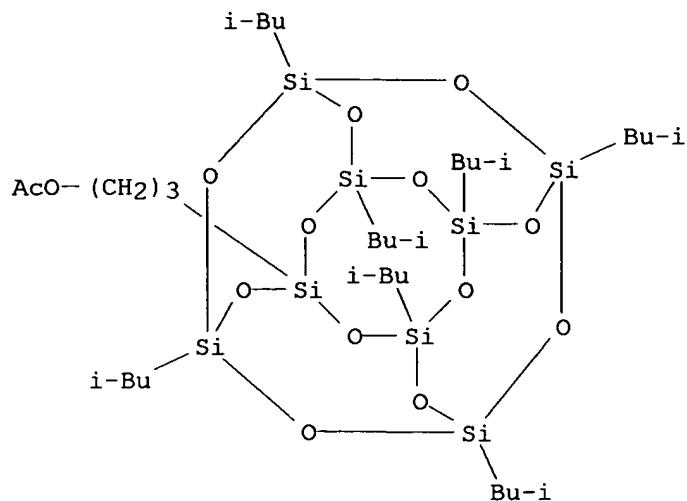
RN 757199-07-8 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
 3,5,7,9,11,13,15-heptacyclopentyl-, acetate (9CI) (CA INDEX NAME)



RN 757199-09-0 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
 3,5,7,9,11,13,15-heptaethyl-, acetate (9CI) (CA INDEX NAME)

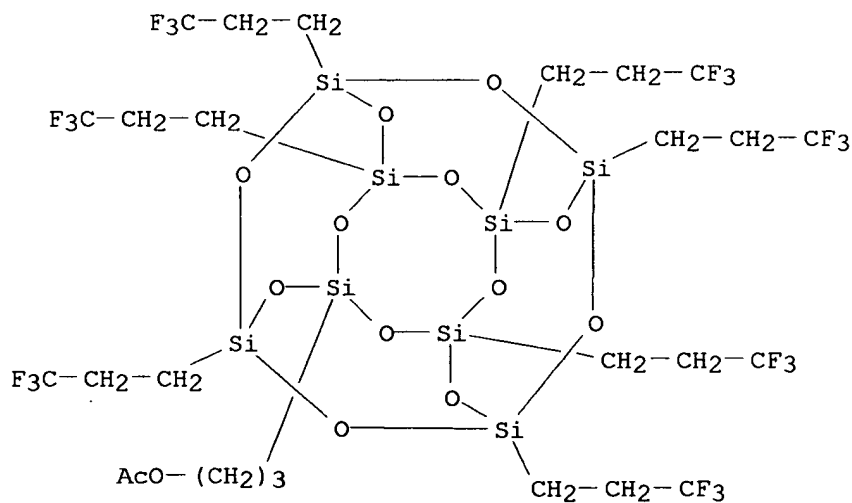


RN 757199-11-4 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
 3,5,7,9,11,13,15-heptakis(2-methylpropyl)-, acetate (9CI) (CA INDEX NAME)



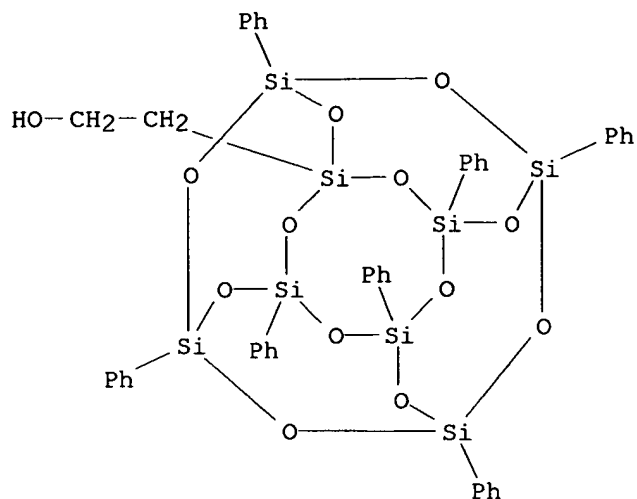
RN 757199-13-6 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
3,5,7,9,11,13,15-heptakis(3,3,3-trifluoropropyl)-, acetate (9CI) (CA  
INDEX NAME)

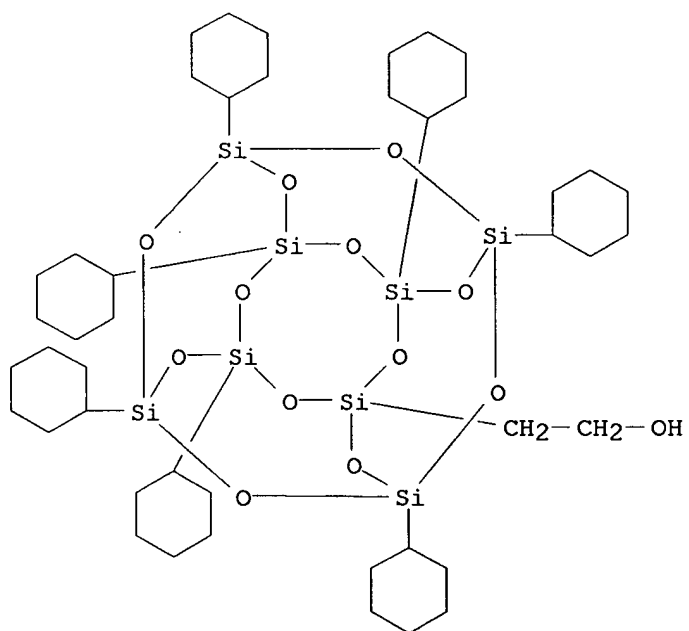


RN 757199-15-8 CAPLUS

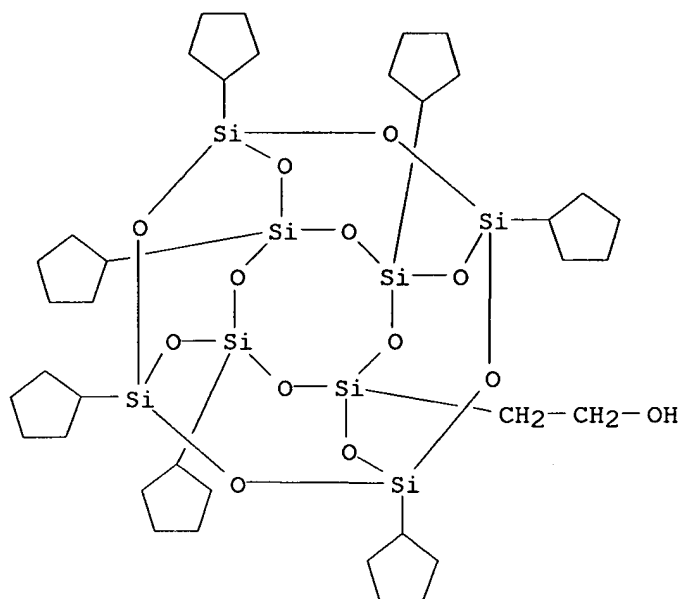
CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
3,5,7,9,11,13,15-heptaphenyl- (9CI) (CA INDEX NAME)



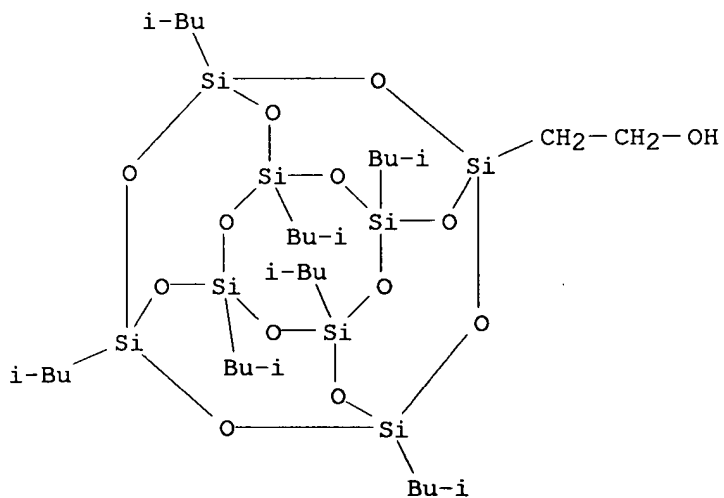
RN 757199-17-0 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
 3,5,7,9,11,13,15-heptacyclohexyl- (9CI) (CA INDEX NAME)



RN 757199-19-2 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
 3,5,7,9,11,13,15-heptacyclopentyl- (9CI) (CA INDEX NAME)

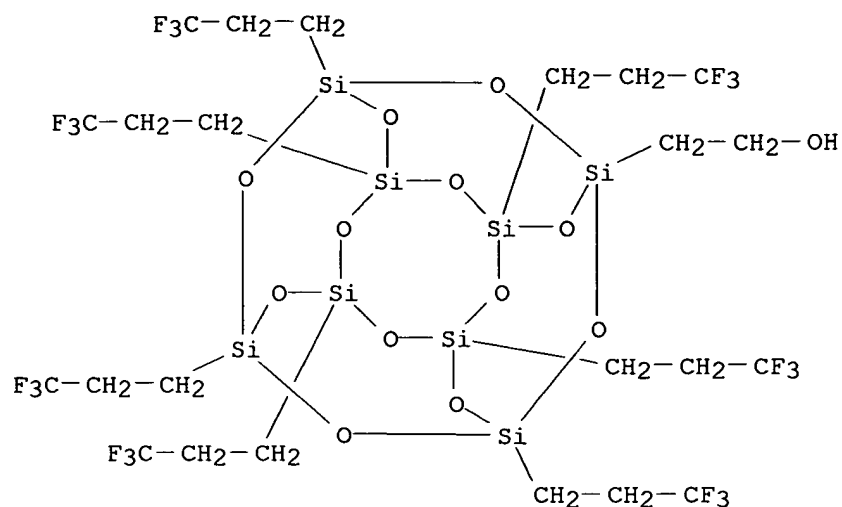


RN 757199-22-7 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
 3,5,7,9,11,13,15-heptakis(2-methylpropyl)- (9CI) (CA INDEX NAME)

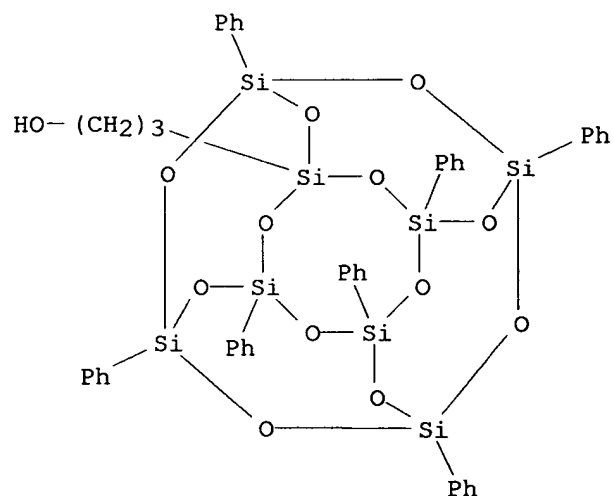


RN 757199-24-9 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
 3,5,7,9,11,13,15-heptakis(3,3,3-trifluoropropyl)- (9CI) (CA INDEX NAME)



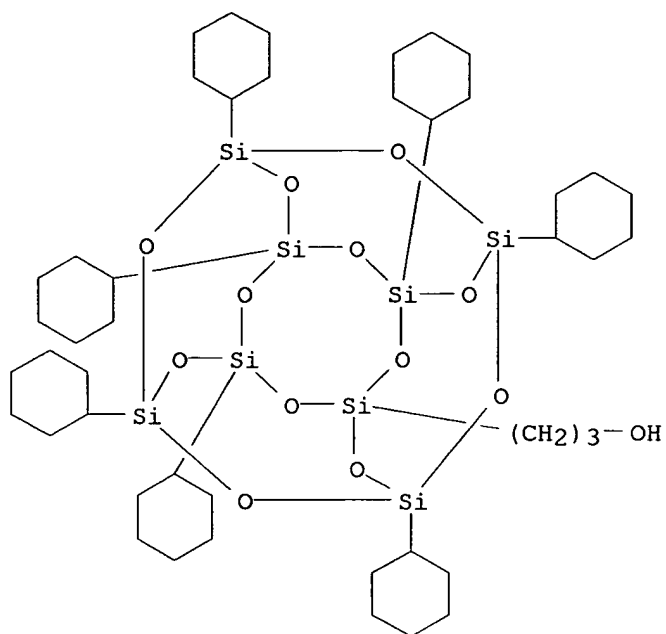


RN 757199-26-1 CAPLUS

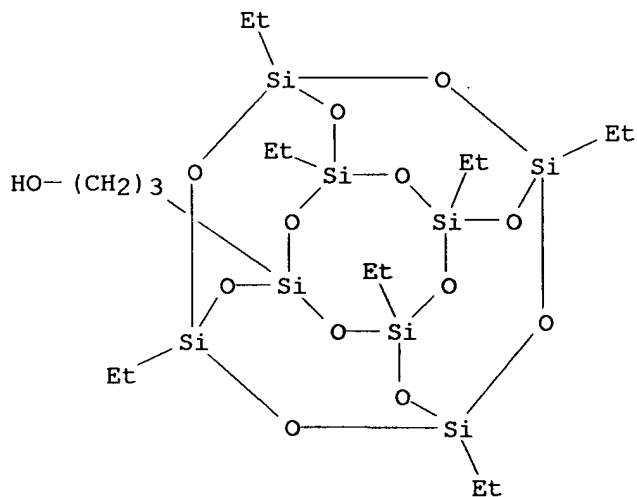
CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
3,5,7,9,11,13,15-heptaphenyl- (9CI) (CA INDEX NAME)

RN 757199-28-3 CAPLUS

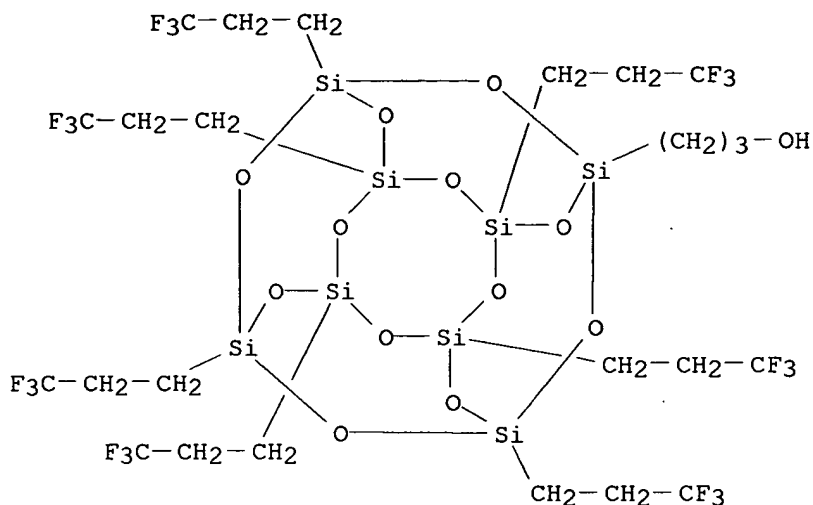
CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
3,5,7,9,11,13,15-heptacyclohexyl- (9CI) (CA INDEX NAME)



RN 757199-31-8 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
 3,5,7,9,11,13,15-heptaethyl- (9CI) (CA INDEX NAME)

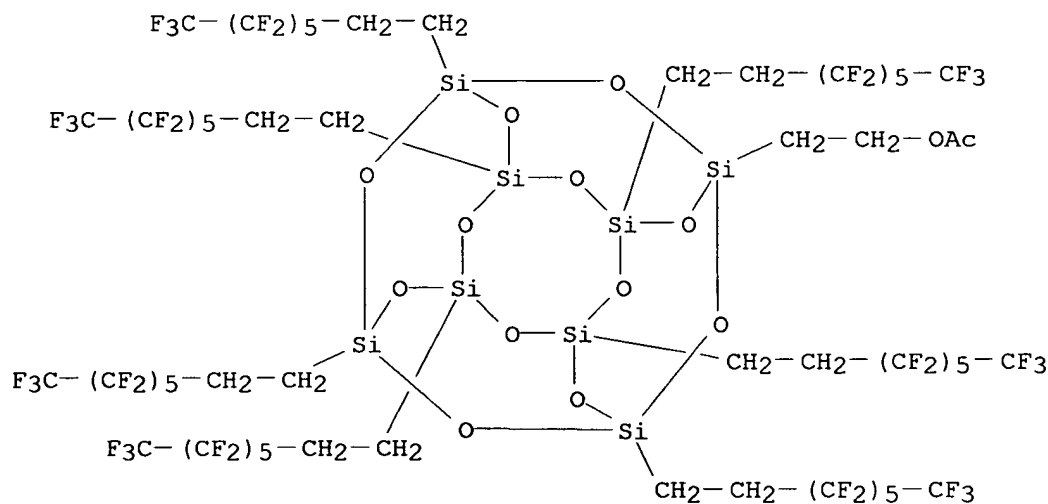


RN 757199-34-1 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
 3,5,7,9,11,13,15-heptakis(3,3,3-trifluoropropyl)- (9CI) (CA INDEX NAME)



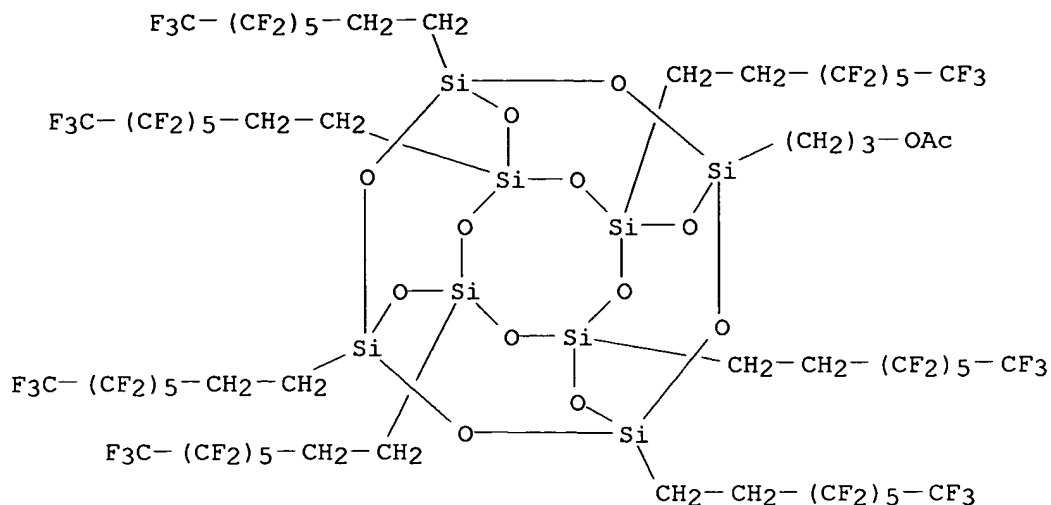
RN 757199-40-9 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol,  
3,5,7,9,11,13,15-heptakis(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)-,  
acetate (9CI) (CA INDEX NAME)



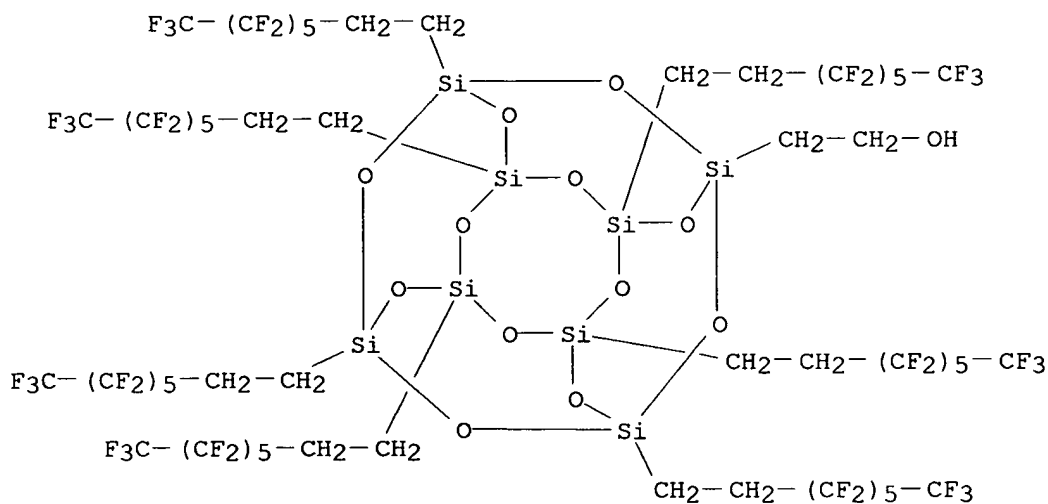
RN 757199-42-1 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
3,5,7,9,11,13,15-heptakis(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)-,  
acetate (9CI) (CA INDEX NAME)



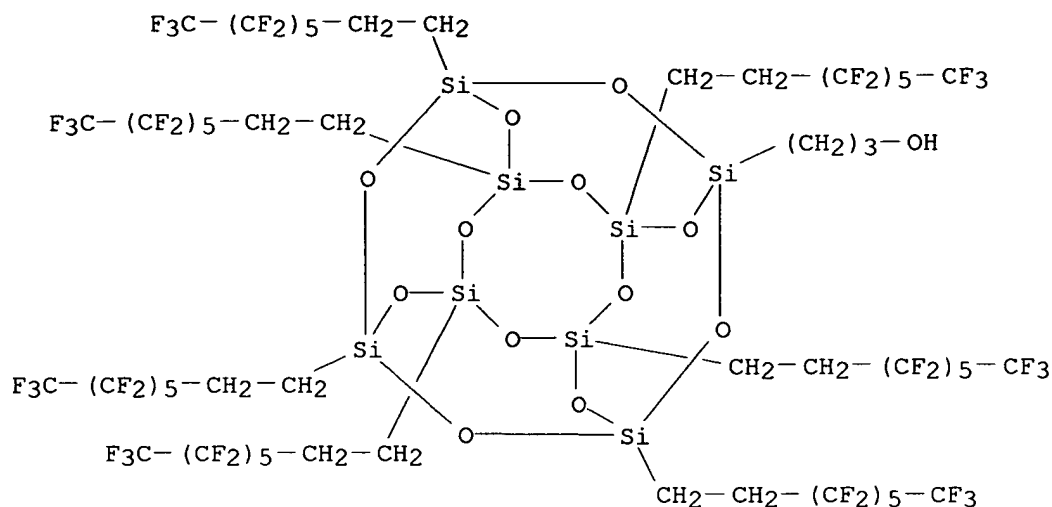
RN 757199-44-3 CAPLUS

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3,5,7,9,11,13,15-heptakis(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)-  
(9CI) (CA INDEX NAME)

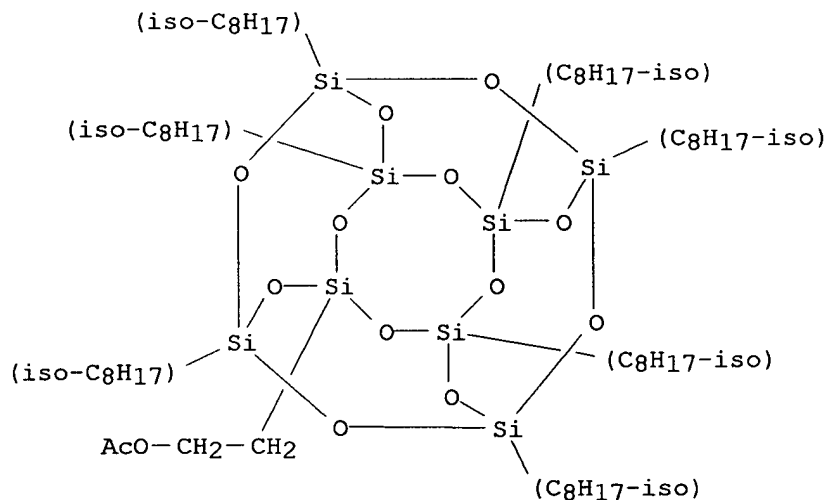


RN 757199-46-5 CAPLUS

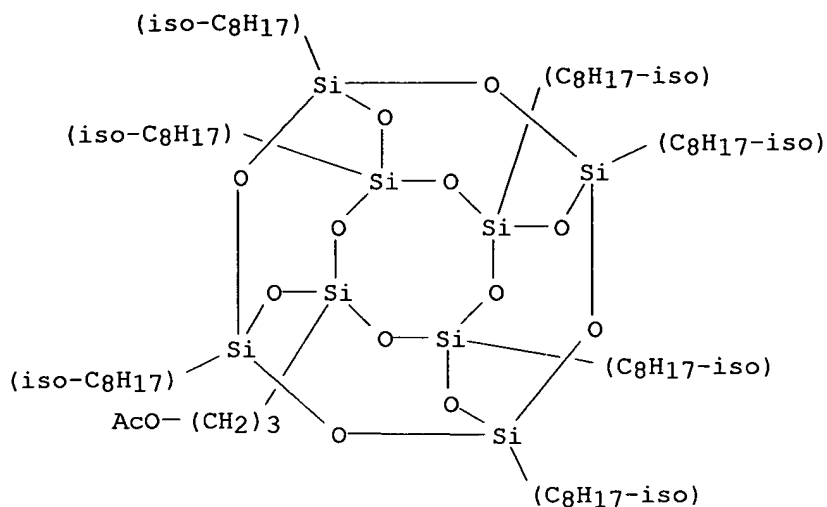
CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
3,5,7,9,11,13,15-heptakis(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)-  
(9CI) (CA INDEX NAME)



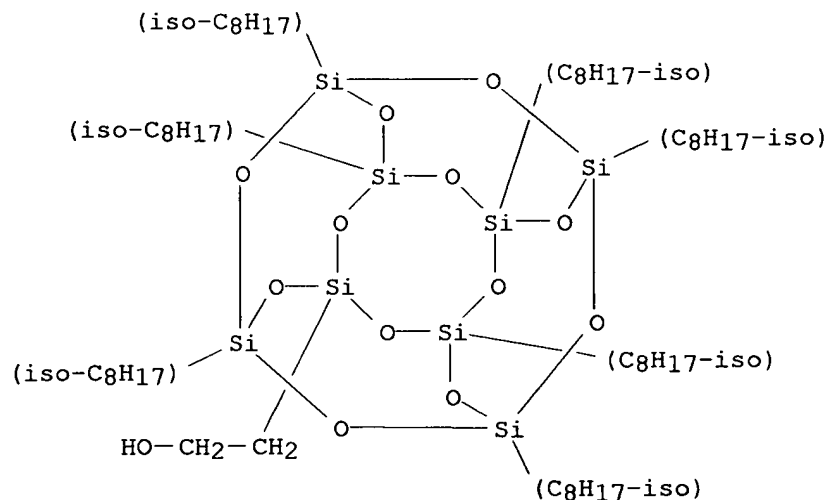
RN 757212-06-9 CAPLUS  
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 3,5,7,9,11,13,15-heptafluorooctyl-, acetate (9CI) (CA INDEX NAME)



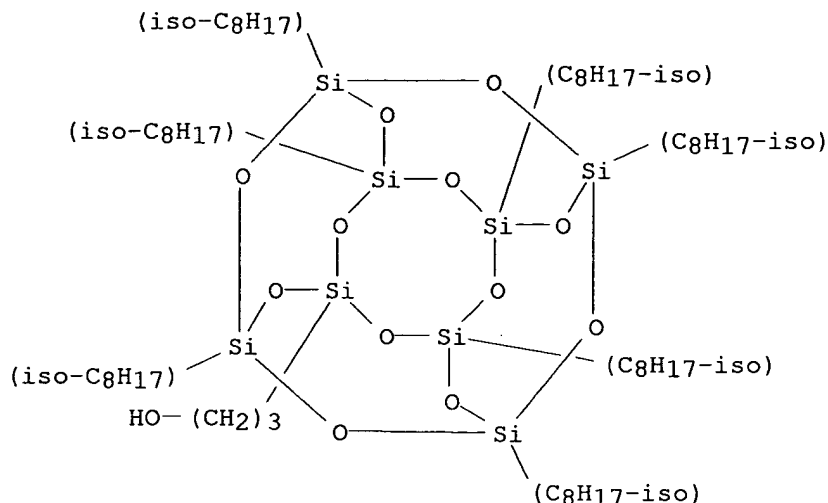
RN 757212-07-0 CAPLUS  
 CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
 3,5,7,9,11,13,15-heptafluorooctyl-, acetate (9CI) (CA INDEX NAME)



RN	757212-08-1	CAPLUS
CN	Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxaneethanol, 3,5,7,9,11,13,15-heptaisooctyl- (9CI) (CA INDEX NAME)	



RN	757212-09-2	CAPLUS
CN	Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol, 3,5,7,9,11,13,15-heptaisooctyl- (9CI) (CA INDEX NAME)	



RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:570095 CAPLUS

DN 140:365500

TI Fluoropolymer resists for 157 nm lithography

AU Vohra, Vaishali R.; Liu, Xiang-Qian; Douki, Katsuji; Ober, Christopher K.;  
Conley, Will; Zimmerman, Paul; Miller, Daniel

CS Department of Materials Science & Engineering, Cornell Univ., Ithaca, NY,  
14853, USA

SO Proceedings of SPIE-The International Society for Optical Engineering  
(2003), 5039(Pt. 1, Advances in Resist Technology and Processing XX),  
539-547

CODEN: PSISDG; ISSN: 0277-786X.

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

AB Fluoropolymers have been shown to be one of the best materials for high transparency of 157 nm wavelength radiation. Both resists and pellicles are being designed from such materials. One of the authors approaches to improved transparency for 157 nm resists is based upon fluorinated variations of polymethacrylate and polyhydroxystyrene derivs. Lithog. studies were carried out on exptl. resist platforms using 157 and 248 nm steppers, and it was shown that, after selective modification, it is possible to use conventional resist backbones, such as acrylic or styrenic, in the design of single-layer resists for 157 nm lithog. It has been demonstrated in the authors studies that 157 nm absorbance of these materials can be as low as 1.5-2.0  $\mu\text{m}^{-1}$ . Another approach to 157 nm resist design is based upon fluorinated backbone variations. Research will be described focusing on several new monomers having fluorine functions such as -F and -CF<sub>3</sub> groups near a polymerizable double bond to improve transparency at 157 nm and to raise the resist glass transition temperature compared to their hydrocarbon analogs. Due to the lower electron

d.

of the double bond, these monomers can be copolymd. with electron-rich vinyl monomers. As an extension to this strategy, the authors are synthesizing novel fluoropolymers having partially fluorinated monocyclic structures with radical cyclo-polymerization These polymers have the C-F bond

on

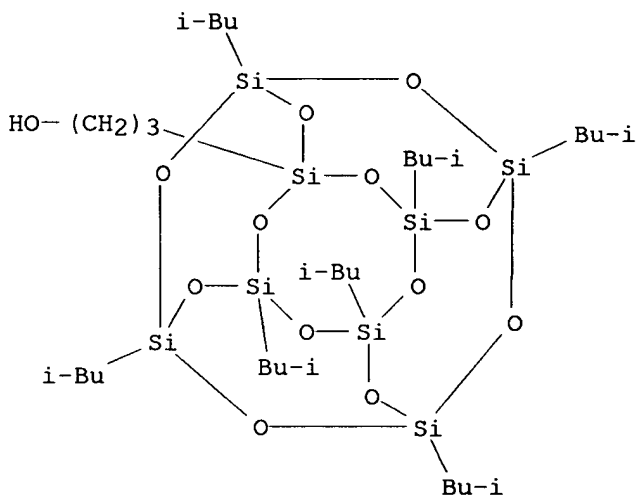
the polymer main chain and also possess acid labile groups as part of a ring structure to eliminate degassing. In order to further enhance the transparency of these systolic polymers at 157 nm, we have eliminated the carbonyl group. The cyclic nature of the polymer will result in a high glass transition temperature

IT **681235-70-1P**

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(design and properties of fluoropolymers for single-layer chemical  
amplification photoresist formulations for 157 nm exposures)

RN 681235-70-1 CAPLUS

CN Pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanepropanol,  
3,5,7,9,11,13,15-heptakis(2-methylpropyl)- (9CI) (CA INDEX NAME)



IT **681235-60-9P 681235-66-5P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);

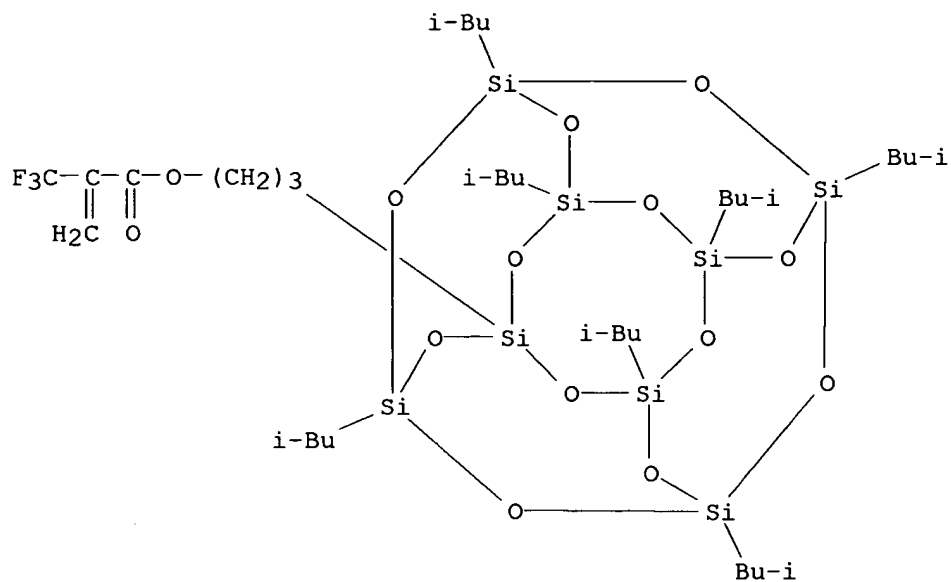
**RACT (Reactant or reagent)**

(monomer; design of fluoropolymers for single-layer chemical amplification  
photoresists for 157 nm lithog.)

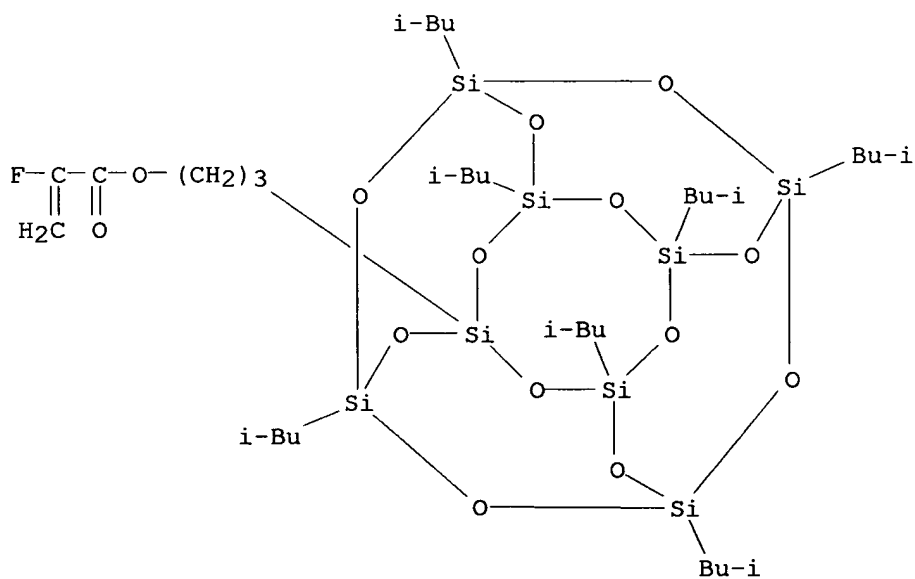
RN 681235-60-9 CAPLUS

CN 2-Propenoic acid, 2-(trifluoromethyl)-, 3-[heptakis(2-methylpropyl)pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanyl]propyl ester  
(9CI) (CA INDEX NAME)





RN 681235-66-5 CAPLUS  
 CN 2-Propenoic acid, 2-fluoro-, 3-[heptakis(2-methylpropyl)pentacyclo[9.5.1.1.3,9.15,15.17,13]octasiloxanyl]propyl ester (9CI) (CA INDEX NAME)



RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

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